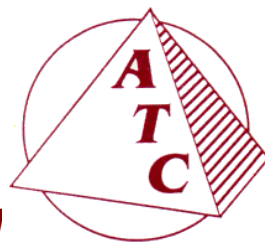


661 Emory Valley Road, Suite A
Oak Ridge, Tennessee 37830 USA
Tel: (856) 483-5756 Fax: (865) 481-3473
Web: www.atc-ssm.com
e-mail: Fahmy.haggag@atc-ssm.com

**ADVANCED
TECHNOLOGY
CORPORATION**



December 15, 1999

Subject: Comment on the DOT public meeting, Docket No. RSPA-99-6355, Notice 1

New technologies are developed every day and it is the duty of the inventor or the developer of a proven technology to introduce it to the applicable industry and its regulators. Therefore, I would like to make the pipeline industry and the Office of Pipeline Safety aware of the innovative Stress-Strain Microprobe (SSM) technology. The multi-million dollar SSM technology was developed by Advanced Technology Corporation (ATC) of Oak Ridge, Tennessee, over the past ten years, and it has received several awards (including a coveted 1996 R&D 100). The SSM is the only technology which provides nondestructive and in-situ measurements of the yield strength and the fracture toughness of steel pipelines. These are the most important properties required to accurately determine the structural integrity of accidentally-dented or damaged pipelines. This is very important since smart pigs and visual inspection can not measure these key mechanical properties. The SSM technology will complement other inspection techniques to provide an enhanced damage prevention program which reduces the risk in high consequence areas. This proven and demonstrated technology is described in Publications No. 23 and No. 24 which are downloadable from ATC's Internet web site: **www.atc-ssm.com**. The two reports are entitled: "Nondestructive Determination of Yield Strength and Stress-Strain Curves of In-Service Transmission Pipelines Using Innovative Stress-Strain Microprobe Technology," ATC/DOT/990901, September 1999, and "Nondestructive and Localized Measurements of Stress-Strain Curves and Fracture Toughness of Ferritic Steels at Various Temperatures Using Innovative Stress-Strain Microprobe Technology," DOE/ER/82115-2, October 1999 (final report of a \$600,000 DOE SBIR Phase II project). ATC's web site also includes numerous publications and short videos of a field demonstration of the innovative SSM technology.

I attended many presentations during the DOT/OPS public meeting on November 18, 1999, and I did not see any technology which can nondestructively measure the current yield strength and fracture toughness of unknown steel pipeline or the degraded values of dented or damaged pipelines. For example, the use of smart pigs can determine the location of dents in a pipeline. However, the complementary use of the SSM technology will allow the deterministic structural integrity assessment (by nondestructively measuring the yield strength and fracture toughness of the dented pipe) to prevent future failures. The SSM test results will allow the pipeline operator to determine the appropriate repair action, as well as the safe operating pressure until a repair is made, if necessary. Currently there is no engineering guidelines for determining the safe operating pressure of a steel pipe that has dents (as indicated on page 6 of Docket No. RSPA-98-4733; Amdt. 192-88; 195-68). Hence, I kindly urge the DOT/OPS to assess the SSM technology (described in great details in the above referenced reports) to complement the current needs to enhance the operational safety of natural gas and hazardous liquid pipelines. The DOT/OPS endorsement of new technology areas and issuing of waivers for the use of technological innovations will save

million of dollars for the pipeline industry while improving the operational safety.

If you need any further information, please contact me.

 Sincerely,

Fahmy M. Haggag
President/Chief Engineer